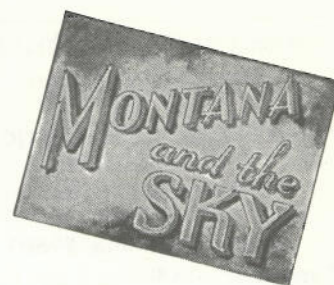


*Best Wishes
for a
Happy New Year
from the
Aeronautics Commission
and Staff*



MONTANA AERONAUTICS COMMISSION

Volume 21—No. 11

December, 1970

44 MECHANICS REGISTER FOR AMRS IN DECEMBER

Forty-four mechanics from around the state attended the two Aviation Mechanics Refresher Seminars sponsored by the Montana Aeronautics Commission in December. Twenty-seven mechanics were registered for the seminar in Missoula, December 3, 4 and 5, and seventeen mechanics registered for the seminar in Billings, December 6, 7 and 8.

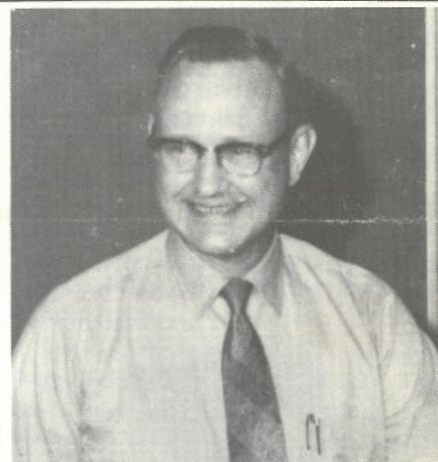
In addition to the mechanics that were registered and attended on a full time basis, there were a number that attended at each seminar on a one day basis.

INSTRUCTORS

Instructors	Company Represented	Seminars
Aircraft		
Scott Hutchinson	Beech Aircraft Corp.	Missoula & Billings
R. W. "Dav" Davenport	Piper Aircraft Corp.	Missoula & Billings
Engine		
Stanley Kowalski	AVCO-Lycoming	Missoula & Billings
Ken Gardner	Teledyne Cont. Motors	Missoula & Billings
Component Manufacturers		
S. S. Coates	AC Spark Plug Co.	Missoula & Billings
Tom A. Stanford	Bendix Corporation	Missoula & Billings
Federal Aviation Administration		
C. R. "Bob" Taylor	FAA GADO #9	Missoula
Richard Brodowy	FAA GADO #9	Missoula
James R. Crouse	FAA GADO #1	Billings
Jess Larsen	FAA GADO #1	Billings
Carl Hutchinson	FAA Electronics	Missoula & Billings

MISSOULA SEMINAR

The Seminar class sessions were held in the U. S. Forest Service Aerial Fire Depot Facilities located at Johnson-Bell Field in Missoula.



Scott Hutchinson—Beech



R. W. Davenport—Piper

(Continued Page 4)

**Official Monthly Publication
City/County Airport
of the**

**MONTANA AERONAUTICS
COMMISSION**

Phone 449-2506

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Helena, Montana 59601

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Edited by: C. Joyce McCutcheon



Director's Column



On December 18 the Commission office received a resolution from the Montana Pilots Association, Montana Airport Management Association and Montana Aviation Trades Association, setting forth their concern about the future of the Aeronautics Commission and the one cent per gallon gasoline tax.

They suggest that the Executive Branch of the State Government have a separate department for the administration of aeronautics in Montana rather than be a part of another department as is presently proposed in the Governor's Reorganization Plan.

To all of us the Aeronautics Commission is the single most important agency in the government but on the organizational chart it is presently one of 160 agencies. It has been placed in the Department of Intergovernmental Relations with the explanation that this department will perform the duties now being performed by other agencies including the Office of Economic Opportunities, the Arts Council and the Commission on Printing, but will have in addition to those duties two separate agencies, one for Planning and Economic Development, and the other, the Aeronautics Agency.

There has been many suggestions relating to the creation of a department of transportation. To many people it seems logical that we should be in a department of transportation with the Highway Department and other transportation oriented organizations.

Those opposing that idea felt the FAA had got lost in the shuffle on the national scene in the Department of Transportation and if our seventeen man agency were to be with the 2,500 man Highway Department, it might have difficulty making the scene.

Naturally the Commission is quite concerned about this problem and is as anxious to know what the Legislature will finally do as anyone. Our present situation, as proposed in the Department of Intergovernmental Relations, is not so unreasonable as it appears at first. Transportation, in the sense of actually transporting people or property, is a very very small part of the Commission's business. Much of the personnel's time is spent dealing in intergovernmental relations with city, county and federal officials as well as other state agencies. We are advisers, counselors, educators and boosters for aviation to all levels of government. This is one of the most important departments proposed by the Governor and should the Legislature agree that this is the place for the Aeronautics Division, I believe we can do a good job for aviation as a part of the Department of Intergov-

ernmental Relations.

Regardless of how the Aeronautics will finally show on the organizational chart, you may rest assured that your Commission and staff will do everything possible to make certain that the Legislature and all others know the importance of aviation in this state.

The one cent a gallon gasoline tax is an essential part of anything that is to be done for aviation in Montana. Your commission and staff agree with the resolution and will do everything possible to make certain that the integrity of this fund is not disturbed.

Regardless of how things come out, it is gratifying to know that three important organizations of the aviation industry have gone on record in support of the aims and goals of the Aeronautics Commission and, united, I think a good presentation can be made on behalf of aviation and that we have an opportunity to once again remind the public of the importance of aviation in Montana.



At the last Commission meeting here in Helena a delegation of Chamber of Commerce people representing the cities of Missoula, Helena and Bozeman asked the Commission to do whatever it could to help these cities, which were badly in need of air service, to obtain air service and to obtain information concerning striking airlines. Their concern for their communities and their knowledge that aviation was absolutely necessary for the development of their communities was evident from their well presented case for action to either end the strike or obtain aviation service.

They met with the Commission Friday morning and that afternoon Northwest announced the end of the strike. We cannot always promise action this prompt but we can certainly assure you that everything will be done to help anyone interested in aviation whether they are in the flying business or not. We certainly want to congratulate this group for their action which we believe helped to bring about a quicker settlement

of the strike.

The policy of the Commission concerning certificates for scheduled airlines is to make good aviation transportation available to the traveling public. At the same time the Commission seeks to avoid undue burden on the operator so that he can use most of his resources to fly his proposed route. The Montana Legislature has set out the conditions under which the Aeronautics Commission may issue a certificate and what information the application of any carrier must contain in order to obtain this certificate. Since the Commission is charged with the regulation of aviation in certain areas and under certain conditions, it must comply with the statute and must demand sound operation combined with safe conditions. It is incumbent upon the applicant to prove that he can meet the statutory requirements. The Commission has issued certificates within these limits set forth by the Legislature and hopes to issue others. The reduced bus and train travel makes it imperative that aviation services increase as soon as possible.

The Commission has indicated over and over again its willingness to cooperate with and encourage people to offer aviation services and to encourage the traveling public to use it. In most cases this has been the situation in applications for a certificate. If you, or anyone you know, is considering flying a route and applying for a certificate, I would like to suggest that you contact the Aeronautics Commission. You will find them most helpful and willing to give you whatever information you need.



TOWER OPERATIONS

NOVEMBER, 1970

	Total Operations	Instrument Operations
Billings	6,259	1,652
Great Falls	5,706	1,339
Missoula	4,181	467
Helena	2,747	298



CALENDAR

January 7, Helena—Bid opening for printing of Montana Aeronautics Commission's Aeronautical Chart.

January 13 & 14—Montana Aeronautics Commission monthly meeting.

January 16, Baker—Aviation Safety Seminar conducted by personnel of GADO #1, Billings. Participating on the one day seminar will be George Batchelder, Jim Crouse, Tom Walenta and Carl Hutchinson.

January 18-20, Kansas City, Missouri—FAA/States' Directors Annual Meeting.

January 23, Lewistown—Aviation Safety Seminar conducted by personnel of GADO #1, Billings. Participating on the one day seminar will be George Batchelder, Jim Crouse, Tom Walenta and Carl Hutchinson.

January 31-February 3, Anaheim, California—1971 Annual Meeting and Industry Showcase sponsored by the Helicopter Association of America. Headquarters: Disneyland Hotel and Anaheim Convention Center.

February 15-19, Bozeman—Civil Defense Aerial Radiological Monitoring Course. Course will be held at the Holiday Inn.

Mexico Tour: "Split Special". February 6-16, Mexico Section. February 15-March 2, Central America. Detailed brochure may be obtained by writing to: Aviation Tour and Travel Service, P. O. Box 84, Hutchinson, Minnesota 55350.

March 8-19, Mexico—"Independence" Tour.

March 29-April 9, Mexico—"Symphony" Tour.

April 5, Great Falls—Tentative date of Flight Instructors Instrument Refresher Course. The Montana Flight Instructors and Flight Operators will be notified the latter part of January as to details and application for attending the FIRC 1971.



747 MAKES FIRST LANDING IN STATE

A Northwest Airlines 747 made the first Montana landing at Billings Logan Field at 3:30 p.m. on December 16. Pilot for the training flight was Montana native, Paul Soderlind.

PILOTS SAFETY SEMINAR HELD IN SCOBEEY

The Pilots Safety Seminar, held in Scobey on December 12 and conducted by personnel of the FAA's GADO #1—Billings, was attended by 31 pilots.

The one day seminar was highly successful and the pilots thoroughly enjoyed the added feature—a presentation on "The Medical Aspects of Flying", presented by Dr. Merle Fitz of Scobey.

GADO personnel participating were: George Batchelder, Accident Prevention Specialist, acted as seminar moderator; Jim Crouse, Chief, GA Maintenance Unit presented "Fuel Systems and Fuel Contamination"; Tom Walenta, Chief, GA Operations Unit, presented "Traffic Approach"; Carl Hutchinson, Electronics Inspector, presented "Navigational Aids and Communications".

Similar seminars will be held throughout the winter and all pilots are urged to attend a seminar presented in their area. Seminars scheduled for January are Baker on January 16 and Lewistown on January 23.

FEDERAL AVIATION ADMINISTRATION ITINERARY LISTINGS

Airport	Jan.	Feb.	Mar.
Culbertson		3	
Glasgow	6		10
Glendive	21		25
Great Falls	7	4	4
Lewistown		17	
Miles City		18	
Missoula	21	18	18
Sidney	20		24

NOTE: Provisions have been made to give private, commercial and flight examinations ON AN APPOINTMENT BASIS ONLY at the following FAA Flight Service Stations.

Bozeman	Lewistown
Butte	Livingston
Cut Bank	Miles City
Dillon	Missoula
	Great Falls

NOTE: Until further notice GADO #1 in Billings will be open the third Saturday of each month ON AN APPOINTMENT BASIS ONLY!

REGISTERED TRAINEES

Burgess, Douglas G.	Vo-Tech School	Helena
Burkhart, Wilbur	Johnson Flying Svs.	Missoula
Chambers, William R.	Vo-Tech School	Helena
Colby, Robert D.	Glacier View Skyways	Kalispell
Daniels, Roy S.	Independent	Missoula
Dashnea, L. D. "Pete"	Johnson Flying Svs.	Missoula
Fredrickson, Clyde	Hamilton Aircraft	Hamilton
Gardenier, Richard G.	Missoula Skyflite	Missoula
Gonsioroski, Jerry D.	Vo-Tech School	Helena
Gyles, Dale R.	Executive Aviation	Missoula
Hamer, Blair	State Forester Dpt.	Missoula
Hanrahan, Dean	Morrison Flying Svs.	Helena
Harris, Rourke B.	AASF Army Ntl. Guard	Helena
Jacobson, Roger Allen	Vo-Tech School	Helena
Johnson, William F.	Johnson Flying Svs.	Missoula
Johnson, Patrick L.	Independent	Helena
McNary, William B.	Butte Aero	Butte
Micknak, Don	Johnson Flying Svs.	Missoula
Olfert, Ronald	Vo-Tech School	Helena
Read, Stanley G.	L.M.A. New Guinea	Missoula
Schenk, David	Vo-Tech School	Helena
Stockhill, Larry	Stockhill Aviation	Kalispell
Timm, Philip E.	Timm Aero	Polson
Van Manen, Donald	Strand Aviation	Kalispell
Wilhelm, Clayton D.	AASF Army Ntl. Guard	Helena
Wolfer, Louis	Johnson Flying Svs.	Missoula
Wryn, Frank B.	Johnson Flying Svs.	Missoula

BILLINGS SEMINAR

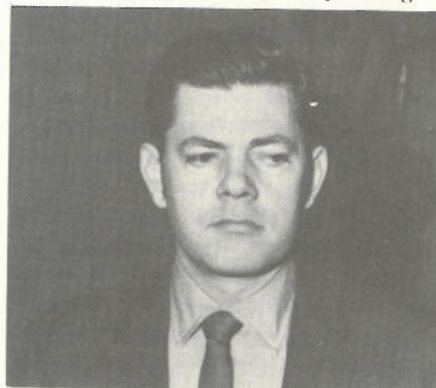
The Seminar in Billings was held in the Pilots' Meeting Room in the Administration Building, Logan Field.

REGISTERED TRAINEES

Albright, Rolan T.	Albrights Flying Svs.	Roundup
Anderson, Alton D.	Lynch Flying Svs.	Billings
Belcher, Ronald	Albrights Flying Svs.	Roundup
Boles, Robert S.	Boles Aviation	Hardin
Ferguson, Michael D.	Big Sky Maintenance	Billings
Gillet, LeRoy L.	Gillis Aviation	Billings
Keilman, Harold	Vo-Tech School	Helena
Martin, Gary J.	Mendel Flying Svs.	Malta
McCurdy, Edward W.	Vo-Tech School	Helena
Ostermiller, Wm. L.	Lynch Flying Svs.	Billings
Patenaude, A. J. "Pat"	Red Lodge Airways	Red Lodge
Rasmussen, Norman W.	Modern Aire Flt. Svs.	Culbertson
Rimby, Willard L.	Skycraft	Lewistown
Ruff, John A.	Flight Line, Inc.	Bozeman
Schneider, Michael	Boles Aviation	Hardin
Wendland, Kenneth N.	Big Sky Maintenance	Billings
Young, Ron	Commercial Helicopter	Billings



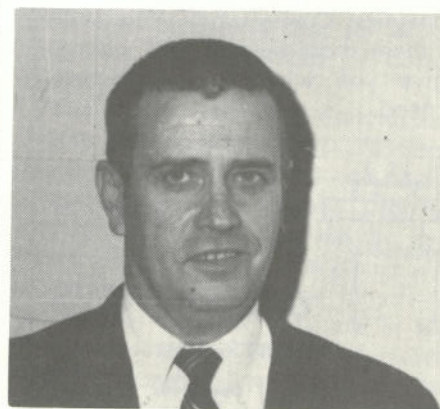
Stan Kowalski—AVCO/Lycoming



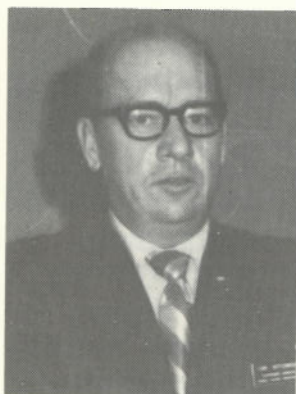
Ken Gardner—Teledyne/Continental



S. S. Coates—AC Spark Plugs



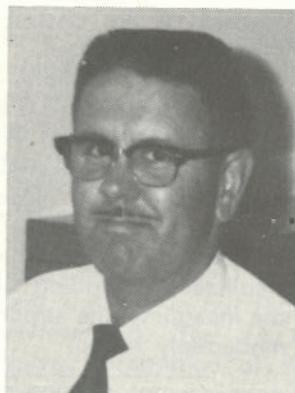
Tom Stanford—Bendix



Carl Hutchinson



Bob Taylor—GADO #9



Dick Brodowy—GADO #9



Left to right—Jess Larsen and Jim Crouse—GADO #1 and Mr. Roman Mueller. Mr. Mueller, a maintenance specialist from the FAA's Area Office in Minneapolis, spent several days observing the seminars at both Missoula and Billings.

The instructors offered a great deal of information on new equipment and products. The presentations were excellent and from the seminar critiques received, the seminars at Billings and Missoula were highly successful.

The critiques are showing that the date and length of the seminars are preferred by the mechanics and, in addition, many welcome and helpful suggestions are being submitted.

The 1970 Seminar proved that the program is a needed and worthwhile endeavor.

To the following we say a sincere "Thank You."

- to the **Instructors** for their fine instruction;
- to the **Companies** for their cooperation;
- to the **Montana Operators** for their continued support;
- to the **U. S. Forest Service**—Aerial Depot and Personnel;
- to the **City of Billings** and the Airport Management;
- and particularly to the **Aviation Mechanics** who attended in order to upgrade themselves and their industry.

From: The Montana Aeronautics Commission; MAC Director William E. Hunt, and the Course staff, Jack Wilson, Course Manager; C. Joyce McCutcheon, Course Secretary, and Gerald Burrows, Course Technician.

GAMA SPONSORING NATIONWIDE AVIATION EDUCATION PROGRAMS

The General Aviation Manufacturers Association (GAMA) has announced that it is sponsoring an industry-wide program to introduce aviation-oriented curriculums in the nation's elementary and secondary schools and junior colleges.

A GAMA official noted that "more than 10,000 elementary school teachers and over 700 high schools are already offering air age education programs. Each year more schools are becoming interested in developing similar programs. We hope to provide these schools with appropriate guidelines and materials to start an aviation curriculum." A major part of this effort will include GAMA's participation in numerous education conventions and exhibitions throughout the country this fall and early next year. Staffed by air age education specialists from member companies, the GAMA exhibit and materials will acquaint school administrators and teachers with the benefits of aviation education and how to obtain guidance in starting such a program.

On the collegiate level, GAMA is currently sponsoring a \$20,000 research study by the American Association of Junior Colleges. The project, which is presently nearing completion, will contain course descriptions and comprehensive guidelines for developing programs in flight training, aviation technology, air traffic control, aviation management, and airline flight service. The study will be published and distributed later this fall.

The GAMA education program also includes grants to help expand the activities of the National Intercollegiate Flying Association (NIFA) and to sponsor the organization's national competitive meets.

In addition GAMA is sponsoring the development of a nationwide 4-H Aerospace Program that will acquaint over 4 million 4-H youngsters with general aviation and air transportation.

AIRPORT NOTES



By Worthie M. Rauscher
Assistant Director, Airports

Billings—On 11 December, 1970, the \$500,000 addition to the Logan Field terminal building at Billings was officially opened. The addition provided 9,000 square feet of additional floor space on the main floor and 6,000 square feet of future office space on the second floor. Airport Manager Robert Scarborough reports that hopefully the balance of the terminal improvement bonds can be sold by mid-year 1971 for the completion of the terminal building addition. The proposed project would include a second deck loading facility providing 7 gate positions, operations space on the lower level, and completion of the second floor office spaces.

Anaconda—The Anaconda Airport Board has applied to the Federal Aviation Administration for ADAP funds to construct a 3,600 foot turf cross-wind runway. The Board anticipates construction to start in May, 1971.

Butte—The Silver Bow County Airport Commission has applied for federal aid for clear zone acquisition and asphalt overlay to the central 6,850 foot by 150 foot segment of runway 15/33, reconstruct a 500 foot by 75 foot taxiway segment of runway 11/29, and construct a three bay maintenance building. Butte anticipates construction to start in July, 1971.

Rock Creek State Airport—The Rock Creek State Airport near Clinton, Montana, is now open for emergency use. Montana Highway Commission is constructing an overpass across the west end of the airport, this has caused the runway to be moved easterly 1,050 feet. The reconstructed runway remains 4,000 feet in length, however, the new

overpass is not obstruction marked—please use caution.

East Poplar Airport—The Daniels County Airport Board is seeking ways to improve the East Poplar border crossing Airport, (sometimes known as Port of Scobey). Hopefully during the spring of 1971 the clump grass will be removed and the runway soil stabilized by adding aggregate. In the meantime, the airport is open but moderately rough.

NAFI USES GADO 9 MATERIAL

The following notification was submitted by Lee Mills, Chief of the GADO in Helena:

The November, December 1970 edition of the NAFI newsletter contained a reproduction of "Winter Flying" which was prepared by Helena General Aviation District Office in connection with the Federal Aviation Administration's Accident Prevention Program. NAFI, National Association of Flight Instructors, headquartered in Washington, D. C., is an organization which is actively supporting professionalism among the nation's flight instructors.

The "Winter Flying" letter is one of several items of Safety Material developed by Lauren D. Basham, Accident Prevention Specialist at the Helena GADO. This list includes the following items: Hot-High and Humid; Montana is Senior Local Pilot Country; On Pre-flight—Open Letter to Pilots Flying West; The Deadly Stall; The Instrument Approach; the Power Curve; and Thundrestorm—TRW!

The listed items are available to pilots in the field throughout Montana and upon request from the GADO's in Helena or Billings.

Another publication which has enjoyed tremendous success, "Mountain Passes in Montana's Senior Local Pilot Country" was developed in cooperation with Hal Ward, who is the Quality Control Officer for ESSA in Great Falls, Montana. This booklet has been requested by pilots of virtually every state in the United States and several European countries.

CONGRATULATIONS



FAA CERTIFICATES ISSUED RECENTLY TO MONTANA PILOTS STUDENT

Caraveau, Archie D.—Roberts
PRIVATE

Lien, Gerald B.—Lewistown
Olson, Floyd D.—Zahl, N. D.
Anderson, James B.—Billings
Carlson, Gary R.—Billings
Doornek, Martin J.—Billings
Beal, Donald J.—Billings
Kavon, Anthony W.—Plentywood
Bechtel, Stevan A.—Lewistown
Rule, Clarence T.—Butte
Matson, Robert E.—Butte
Irving, Robert S.—Missoula
Fearn, Diana F.—San Mateo, Calif.
Smith, Ben C.—Helena
LeFevre, Norman B.—Bozeman
McNeil, Joseph L.—Great Falls
Gerlinger, Lynn P.—Stevensville
Lundeen, Leonard—Harlem
Chandler, Warner H.—Great Falls
Poncelet, Nick A.—Kalispell
Pearce, E. Richard—East Helena
Cusick, David W.—Kalispell
Nelson, Brian W.—Missoula
Mellor, Lawrence H.—Browning

ATR

Osen, Tom C.—Billings
Allen, Wallace L.—Fort Worth, Tex.

MULTI ENGINE

Wehrman, Eugene D.—Billings
INSTRUMENT

Burgoyne, Henry M.—Billings
Long, Adrien R.—Wolf Point
Cady, Lewis A.—Billings
Hamm, Harold W.—Helena
Brodock, Marvin M.—Fort Benton

FLIGHT INSTRUCTOR

White, Arnold L.—Red Lodge

GOLD SEAL

Liudahl, Daniel W.—Columbia Falls

AIRFRAME MECHANIC

Ogle, Thomas E.—Kalispell

POWERPLANT MECHANIC

Newton, Donald H.—Lewistown
Inman, Jack L.—Helena
McGlynn, Robert C.—Helena

FAA INSPECTORS CORNER



By LAUREN D. BASHAM
Accident Prevention Specialist
GADO No. 9, Helena

FLIGHT INSTRUCTION PROFILE #2

This column previously outlined a flight instructor profile which we believe would greatly enhance our total flight training effort. Such a profile is truly appealing. However, it may never be fully realized until our present flight training concept is radically changed. The reason for this is obvious. The demands of our complex aviation scene in terms of pilot competence far exceeds that which much of our flight training effort is currently producing.

Our general aviation accident statistics offer undeniable proof of the ever present and increasing **Pilot Error** casual factor. While this increase may well be attributed to a certain lack of pilot competence on the date of an accident, this lack of pilot competence can further be traced to a lack of competence on the date of the original flight test certificate. The most revealing factual indication is in the obvious lack of good judgment which is a definite factor in a high percentage of our annual general aviation accident total.

Webster defines "proficiency" as the state of being proficient or precise and "judgment" as the ability to judge wisely. Relate these definitions to the piloting of an aircraft and the need for improvement is only too obvious. We do not believe that any pilot plans deliberately to have an accident. More often than not, it is his failure to preplan with a choice of options which contributes to or causes an accident. We have all heard it said, "You can't teach judgment." To accept such a statement is to accept all accidents with a casual factor of poor judgment as being inevitable.

We believe that **good judgment can be learned** in a flight training environment which presents the subject or lesson to the trainee as an **experience**. We must then redesign our flight training curriculum to provide this experience!

To do this, we must make two basic changes—one in our instructional concept and one in our flight training environment. The first change involves recognition of the fact that to educate for a change is to focus on the future. The instructor must therefore teach beyond his knowledge and for times and happenings not yet experienced. Our current ground and flight instructors are now teaching facts which will soon be forgotten or irrelevant. They must proceed to teach the manipulation of ideas and concepts with lesson objectives at the maximum level of comprehension. The application, analysis and evaluation of information must be such that the trainee is forced to manipulate the information at these levels.

For example, when only facts are taught and tested for, the trainee can only develop the skill of "recall." If instruction is given in the manipulation of knowledge, the trainee will then develop the ability to confront problems and make rational and good judgmental decisions. The second change involves our total flight training environment. In many of today's modern educational institutions, we find audio-visual teaching aids and techniques used extensively. These range from a simple overhead transparency to computerized video-tape teaching machines used for the study of language, science, engineering and even humanities. These are some of the most outstanding teaching aids ever developed and have long since proved their effectiveness. Their expanded use in all of our aviation flight training effort would assist tremendously in an upgrading of the entire national flight training system and provide the trainee unequalled "experience" during the training process.

There are a number of flight train-

ing operations in Montana which have recently placed a flight simulator in use in their flight training operations. These simulators are basically a procedural trainer and well equipped to provide training "experience" under controlled conditions. The advantages of such a simulator are numerous. There is never any "traffic" in a simulator pattern. There is also the added versatility of being able to "freeze" the simulator in the middle of a maneuver to emphasize a point of instruction or to orally review a procedure. Maneuvers and procedures can be repeated by the number during the course of one simulator "flight" without concern for traffic, weather, fuel management or other aircraft environmental problems. The simulator then provides an excellent means of gaining "experience" and thereby learning "judgment" where the cost is never fatal!

We believe that judicious use of an advanced teaching concept designed around the use of the flight training simulator will do much to provide the highly desirable flight training profile in which a lack of pilot experience or good judgment no longer contributes to our General Aviation Accident Statistics, in the form of **PILOT ERROR!!**

STATISTICS

Will your **first** accident be your **last** day alive?

61/37
65/22
78/18
69/18
56/19
57/31
67/19

	Accident Total	Fatalities
1964 Total	61	37
1965 Total	65	22
1966 Total	78	18
1967 Total	69	18
1968 Total	56	19
1969 Total	57	31
1970 To-Date	67	19

ALWAYS FILE A FLIGHT PLAN

PILOT QUIZ

(For the Morning After)
METEOROLOGY

1. Should airline pilots be paid by the Beaufort scale for overtime?
2. Who is qualified to tend an isobar when installed in a transoceanic airliner,
3. Which members of the pilot's family are affected by relative humidity,
4. When ice changes to water, how does it involve the latent heat of confusion?
5. What parachute equipment should be worn during flights where adiabatic changes occur?
6. How does a stable atmosphere affect horsepower?
7. Do air masses refer to religious services conducted aloft?

8. Can a pilot having normal lapse rate, pass the Class 2 physical examination?

9. Will an aneroid operation prevent a pilot from passing a physical exam?

10. How can adjustable seats improve the pilot's sea level?

NAVIGATION

1. Is a rhumbline the shortest distance between two isobars?

2. Can a navigator collect insurance for dead reckoning?

3. What type of lubrication is recommended for radio bearings?

4. How many petals are found on the compass rose?

5. While holding a heading of 360 degrees, might one be considered as a hot pilot?

6. When will the meat shortage

affect an airway beacon?

7. What has pilotage got to do with the date of an aviator's birth?

8. What bank is required to pass a pilot check?

9. What method is employed to prime a Greenwich meridian?

10. What cooling effect will a fan marker have on temperature along the airway?

... Courtesy "Quadrant"

Apollo 12 astronauts agree that about eight hours after launch from the Kennedy Space Center, the earth appeared to be about the size of a volley ball. No global characteristics were easily identified except cloud cover and water. After 32 hours in flight, the earth shrank to the size of a golf ball held at arm's length.

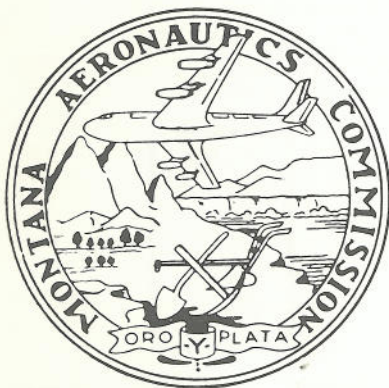
MEMBER

NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS

PURPOSE:—"To foster aviation, as an industry, as a mode of transportation for persons and property and as an arm of the national defense; to join with the Federal Government and other groups in **research, development, and advancement of aviation**; to develop uniform laws and regulations; and to otherwise encourage co-operation and mutual aid among the several states."

P. O. Box 1698

Helena, Montana 59601



DECEMBER, 1970

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